

**A NEW SPECIES OF *APHELOCHEIRUS* FROM SUMATRA,  
AND ADDENDA TO THE WORLD CHECKLIST  
(HETEROPTERA: NAUCORIDAE)**

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*Abstract.*—*Aphelocheirus bengkulu* n. sp. is described based on collections from southern Sumatra. Illustrations are provided of the dorsal habitus and the male and female genital structures. Supplemental couplets are given to incorporate this species into the key of Polhemus and Polhemus (1988) to species occurring in tropical Asia. Addenda are noted for the checklist of world Aphelocheirinae, based on recently published works.

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A recent monograph on the Aphelocheirinae of tropical Asia (Polhemus and Polhemus, 1988) noted the presence of *Aphelocheirus* on Sumatra based on a single macropterous female from Medan, in the northwestern part of the island. Although the authors suspected at the time that this was an undescribed endemic Sumatran species, this female presented no distinguishing morphological characters that would allow it to be unambiguously separated from other *Aphelocheirus* species occurring in the Malay Archipelago, and in the absence of males it was decided to defer any description until more specimens became available.

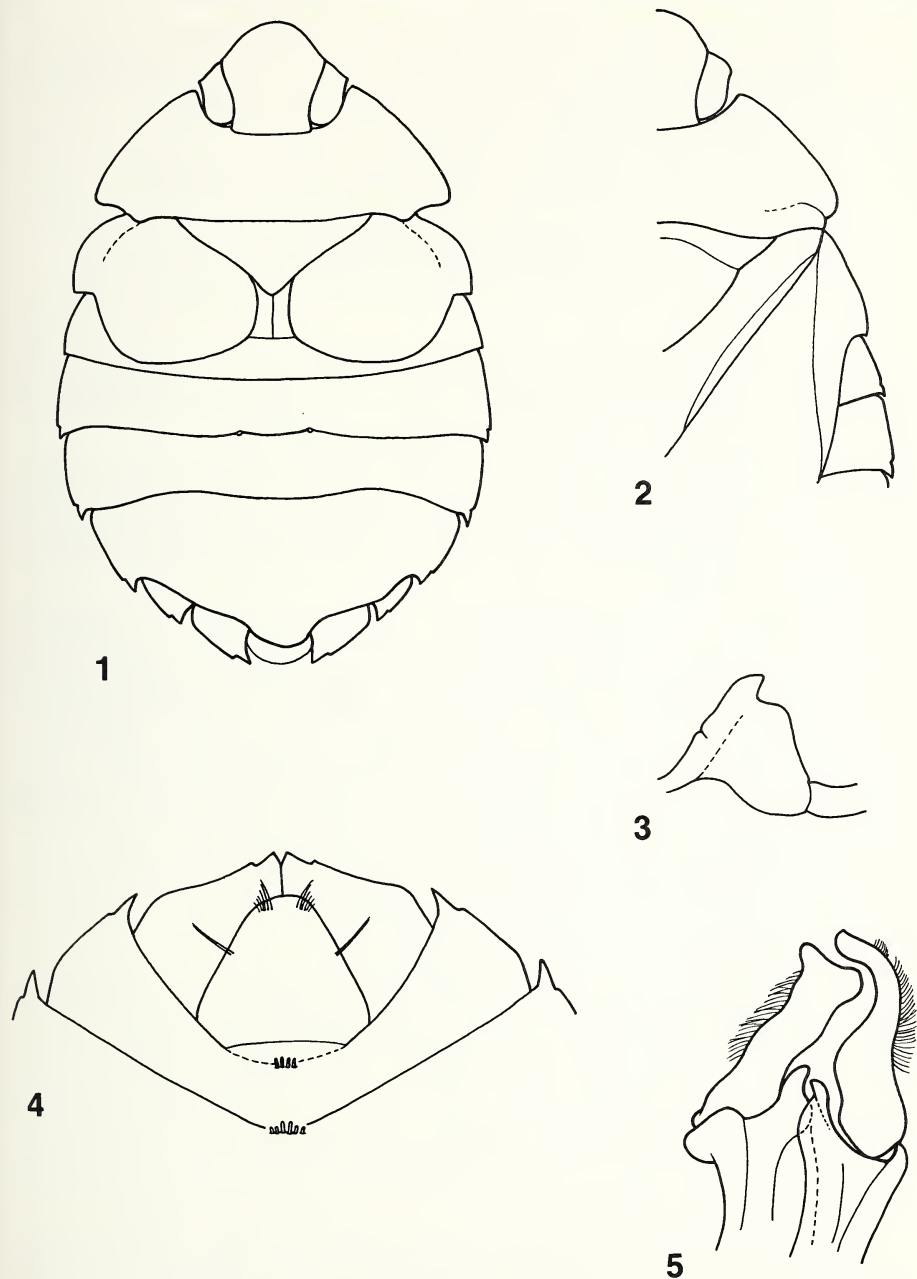
Recent collections by the author and J. T. Polhemus in southern Sumatra during 1991 produced several series of *Aphelocheirus* containing both sexes. The species involved is indeed new, and described herein. The previously discussed female from Medan is morphologically similar to these series, and may be conspecific, but resolution of this matter awaits further material from northern Sumatra, since many genera of aquatic Heteroptera display allopatric speciation patterns between the northern and southern sections of the island.

In the following description CL numbers after localities refer to a system used to cross reference specimens and ecological data. Acronym designations for specimen repositories are given in the acknowledgments section.

***Aphelocheirus bengkulu* new species**

Figs. 1-5

*Diagnosis.*—*Aphelocheirus bengkulu* n. sp. may be distinguished from other known *Aphelocheirus* species in tropical Asia by the distinctive structure of the male parameres (Fig. 5). In the key of Polhemus and Polhemus (1988) to brachypterous forms this species runs to couplet 20, where it may be separated by the absence of a gently raised longitudinal median carina on the abdominal venter, the presence of small peg-like setae medially on the posterior margins of abdominal tergites IV-VI, the structure of the male genitalia, and geographic provenance. The following new couplets may be inserted into that key to accomodate this new species.



Figs. 1–5. *Aphelocheirus bengkulun* sp. 1. Brachypterous male, dorsal habitus (legs omitted). Specimen from Hutabarna River, Sumatra. 2. Macropterous female, showing structure of embolar margin. Specimen from Pauh River, Sumatra. 3. Inner projection of left propleuron. Inner margin at top of figure. 4. Female subgenital plate, ventral view. 5. Male genital complex, dorsal view.

20. a. Abdominal sternites lacking stout peg-like setae medially on posterior margins; Mindanao ..... *A. zamboanga* n. sp.  
 b. Abdominal sternites IV–VI (at least) with 3–6 small stout peg-like setae medially on posterior margins; Australia or Sumatra ..... 20a  
 20a. a. Abdominal venter with gently raised longitudinal median carina; male left paramere with rounded projecting tab on inner margin, tip acute; Australia .....  
 ..... *A. australicus* Usinger  
 b. Abdominal venter with a longitudinal glabrous stripe centrally, but lacking a gently raised longitudinal median carina; male left paramere lacking a rounded projecting tab on inner margin, tip expanded, broadly concave; southern Sumatra .....  
 ..... *A. bengkulu* n. sp.

*Description.* — *Brachypterosus* male: Of moderate size for genus, form ovate, length 6.72 mm; maximum width (across abdomen) 4.51 mm (Fig. 1). Coloration dull medium brown, with head and genital capsule dark yellowish.

*Head* dark amber yellow, infuscated centrally, shining, alveolate, width/length = 1.56/1.06, not exceptionally elongate, produced ahead of eyes for only 0.45 the length of an eye; eyes black, shining, width/length = 0.24/0.90, lateral margins weakly sinuate, not exceeding adjacent anterolateral pronotal angles; anterior/posterior interocular = 1.15/0.74.

*Pronotum* dark brown, yellowish laterally and medially, width/length (midline) = 3.52/0.98, surface coarsely rugose, shining centrally, bearing short recumbent gold setae, lateral margins narrowly glabrous and translucent, each with approximately 13 minute erect peg-like setae, posterolateral angles broadly rounded. Scutellum dark yellow, frequently infuscated basally, width/length = 1.88/0.82, surface rugose, shining, bearing very short recumbent gold setae, lateral margins sinuate, basal margin broadly sulcate. Hemelytra dark brown, brachypterosus, not attaining base of abdominal segment III, barely touching medially, surface rugose, with short fine recumbent gold setae, embolar margin coming to an acute angle, lacking peglike setae.

*Abdomen* dull dark brown, surface sparsely covered with recumbent gold setae, posterior margin of tergite V asymmetrically produced medially (Fig. 1), posterolateral angles of segments III–VII produced to short spines.

*Ventral surface* dull medium brown, weakly pruinose, sparsely covered with short recumbent gold setae; antennae pale yellow, lengths of segments I–IV = 0.08, 0.12, 0.28, 0.44; rostrum gold, glabrous, length 3.30, attaining middle trochanters; prosternum reflexed anteromedially, longitudinally carinate medially, inner projection of propleuron broadly notched, apex acute (Fig. 3); mesosternal plate with sharp longitudinal medial carina, rising to a rounded tumescence posteromedially; abdomen with segments IV–VI with 4–6 short posteriorly directed peg-like setae medially along posterior margins, posterior projections of segment VII with apices acute, slightly exceeding tip of genital capsule.

*Legs* dark yellowish, clothed with fine recumbent gold setae; fore trochanter, femur, tibia and tarsi with thick hair pads on inner faces; fore, middle and hind coxae with combs of gold setae distally; middle trochanter, femur, tibia and tarsi with thick pads of gold setae posteriorly; middle femur with longitudinal row of short brownish spines ventrally, many short recumbent gold spines along anterior margin, 2 slender erect gold spines basally along posterior margin; middle tibia with scattered short stout brownish spines along anterior margin, 3 slender erect gold spines along posterior

margin, roughly longitudinal row of short brownish spinules ventrally parallel to posterior margin, transverse row of reddish spines apically; hind femur with very short sharp gold spines along anterior margin, scattered very short stout brown spinules ventrally; hind tibia with stout reddish spines along anterior margin, transverse row of reddish spines apically; hind tibia and tarsi with long swimming hairs on posterior faces; claws gently curving, gold, tips brown.

*Male genitalia* with right paramere expanded basally, narrowed and curving on distal half, with thick fringe of setae on outer margin; left paramere more massive, inner margin sinuate, outer margin bearing fringe of setae, distal portion expanded, tip concave (Fig. 5).

*Brachypterous female*: Similar to brachypterous male in general structure and coloration, length 7.13 mm; maximum width 4.59 mm. Plates of abdominal segment VII with posterior margins weakly concave, subgenital plate broadly triangular, tip broadly rounded (Fig. 4).

*Macropterous female*: Similar to brachypterous form with following exceptions: length 7.45 mm; maximum width 4.67 mm; dorsal coloration uniformly dull dark brown, pronotum with lateral margins greatly expanded, posterolateral angles broadly rounded; scutellum swollen, mesoscutum evident, delineated by sinuate transverse furrow; hemelytra complete, wing membrane atrovelutinus, mostly disintegrated in single specimen at hand, hemelytral surface bearing recumbent gold setae, texture generally dull, with scattered glabrous areas on clavus and claval commissure, clavus and claval vein well defined, embolar margin gently curving laterally, coming to an acute angle posterolaterally (Fig. 2); prosternum not reflexed anteromedially; mesosternal plate broadly and gently tumescent.

*Discussion*.—On the basis of the male genitalia, *Aphelocheirus bengkulu* falls into a group of species characterized by the possession of a large, distally curving right paramere as viewed from above in the genital capsule (see Fig. 5) with a setose outer margin and a broadly expanded base. This group includes *A. celebensis* Polhemus and Polhemus, *A. lorelindu* Polhemus and Polhemus, and *A. robustus* Nieser and Chen, all species found on Celebes, plus *A. pallens* Horvath from New Guinea and *A. australicus* Usinger from northern Australia. The taxa in this group are distributed on the islands of the Malay Archipelago eastward to Australia, and are distinctive in their male genital architecture from the assemblage of species seen in Indochina, which have slender and acuminate right parameres. The right paramere of *A. bengkulu* is very similar structurally to that of *A. lorelindu*, whereas the left paramere is quite distinct, although perhaps closest to that of *A. minor* from Borneo. The female subgenital plate is relatively unmodified, and similar to that of *australicus* and *pallens*.

*Etymology*.—The name “bengkulu” refers to Bengkulu Province in southern Sumatra where the type series was collected.

*Ecological notes*.—The Hutabarna River at the type locality was a broad, unshaded stream flowing swiftly in a bed of scattered rocks and boulders intermixed with sand and coarse gravel. The *Aphelocheirus* were taken by disturbing the loose substrates in the channels between the boulders while holding a net downstream. Most captures were made in midstream sections, with few of the insects being taken near shore. The single specimen from the Ketelang River was taken from a patch of clean sand at the base of a vertical rock cliff swept by the current.

*Material examined*.—Holotype, brachypterous male: INDONESIA, Sumatra,



Bengkulu Prov., Hutabarna River at Tabarenah, 7 km. W. of Curup, 600 m., water temp. 23.5°C., 7 September 1991, CL 2582, D. A. and J. T. Polhemus (USNM). Paratypes: INDONESIA, Sumatra, Bengkulu Prov.: 7 brachypterous males, 5 brachypterous females, same data as holotype (JTPC, MZB, BPBM); 1 macropterous female, 3 brachypterous males, 2 brachypterous females, Pauh River, 25 km. SE of Muaraaman, 600 m., water temp. 23°C., 8 September 1991, CL 2584, J. T. and D. A. Polhemus (JTPC); 1 brachypterous male, Ketelang River, 39 km. SE of Muaraaman, 720 m., water temp. 21.5°C., CL 2585, D. A. and J. T. Polhemus (JTPC).

#### ADDITIONS TO THE WORLD CHECKLIST OF APHELOCHEIRINAE

Since the publication of the monograph by Polhemus and Polhemus (1988), two additional works dealing with tropical Asian Aphelocheirinae have appeared. The first was a set of supplemental corrections to the monograph's world checklist by J. T. Polhemus (1989), the second a work containing descriptions of new taxa from Borneo and Celebes (Nieser and Chen, 1991). It is anticipated that more new species will be discovered in the region, and further supplements to the monograph will be provided as these become necessary.

The following recently described taxa should be added to the world checklist presented by Polhemus and Polhemus (1988), and updated by J. Polhemus (1989):

*bengkulu* D. Polhemus, n. sp., 1991, J. New York Ent. Soc. Sumatra.

*breviculus* Nieser and Chen, 1991, Tijds. voor Ent., 134:49. Borneo.

*robustus* Nieser and Chen, 1991, Tijds. voor Ent., 134:50. Celebes.

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The holotype of the new species described herein is deposited in the U.S. National Museum of Natural History, Washington, D.C. (USNM); paratypes are held in the Bishop Museum, Honolulu, Hawaii (BPBM), the J. T. Polhemus collection, Englewood, Colorado (JTPC), and the Museum Zoologicum Bogoriense, Bogor, Indonesia (MZB).

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#### LITERATURE CITED

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